Amendments to the Drawings:

    The attached sheet of drawings include changes to Figure 9B. This sheet replaces the original sheet including Figure 9B.

    Attachment: 1 Replacement Sheet

REMARKS

With this amendment, claims 1-9, 11, 13-27, 29, 31-45, 47 and 49-54 are pending in the application. Claims 1, 5, 17, 19, 37 and 53 have been amended. Certain paragraphs of the specification and Figure 9B have also been amended. Claims 10, 12, 28, 30, 46 and 48 were canceled without prejudice in a previous amendment. No new matter has been added.

Rejection of Claims 1-9, 11, 13, 14 and 16-18

In the Office Action mailed November 13, 2008 (hereinafter the "Office Action"), claims 1-9, 11, 13, 14 and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,072,807 to Daudelin (hereinafter "Daudelin") in view of U.S. Patent No. 6,515,977 to Bi et al. (hereinafter "Bi").

In light of the amendment to independent claim 1, Applicants respectfully request the Examiner's reconsideration and further examination of the claims in view of the remarks below.

Independent claim 1, as amended, recites, *inter alia*, "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

One embodiment supporting such claim language is described, for example, on page 36, lines 2-8, with reference to Figure 9A of the present application as filed. Such features and other disclosed features are intended to prevent thrashing (unnecessary deassignment and assignment) due to perturbations in the signal. Stated in another way, even though the signal-strength might be below the first signal-strength threshold, the finger assignment is not deassigned so long as the signal-strength is still above, or satiates, the second signal-strength threshold. The finger assignment will be allowed to be deassigned if the signal-strength remains between the first signal-strength threshold, the threshold above which the finger assignment is enabled for a combine operation, and the second signal-strength threshold, the threshold below which the finger assignment is deassigned, for a time period longer than the time threshold.

Therefore, a mere momentary downward "spike" in the signal-strength below the first signal-strength threshold will not be sufficient to cause deassignment.

It is respectfully submitted that the cited references do not meet the limitations of claim 1. For example, the cited references at least fail to teach or suggest "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

In the Office Action, it is admitted that "Daudelin does not disclose preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold, the second signal-strength threshold being less than the first signal-strength threshold; and determining a time period over which the signal-strength of the finger assignment satiates the second signal-strength threshold, wherein the finger assignment is allowed to be deassigned if the time period fails to satiate a time threshold" (Office Action, page 6).

Nevertheless, certain passages in Bi are cited for disclosing such limitations (Office Action, pages 6-7). In particular, the Office Action states that Bi discloses "measuring a time period during a time interval which the signal strength (quality) spends below a threshold (see column 9, lines 33-59), which in effect also measures the amount of time the finger spends above the threshold (which is the amount of time in the interval the signal quality is above the threshold, and based on the time in which the signal spends above or below the signal quality threshold as compared to a time threshold during the time interval, the finger is de-assigned" (Office Action, page 7).

To be sure, the cited passage of Bi is provided below.

Summer 1101 receives from rake receiver 507 over lead 510 a continuous measure of signal quality of the monitored finger, and continually produces on lead 1113 a value which is less than zero whenever the signal quality of the monitored finger is less than the threshold R. When a finger is newly assigned, block 1102 is initialized by controller 1105 and samples the first length .DELTA.t value on input lead 1114, and then, during the ensuing first length .DELTA.t interval, sums the amount of time which the value on lead 1113 spends less than zero. At the end of this first length .DELTA.t time interval, block 1102 outputs on lead 1115 the total amount of time it has calculated the signal quality from the monitored finger was below threshold R.

The allowed amount of time which the monitored finger's signal quality may spend below the threshold during the preceding length of time .DELTA.t is calculated by multiplier 1112 as P*(.DELTA.t). Summer 1103 forms the difference between the measured amount of time the monitored finger spent below the threshold during the preceding first length .DELTA.t time interval, and the allowed amount of time the signal quality for the monitored finger may spend below the threshold during the preceding first length .DELTA.t time interval. In this embodiment, if this value at any time becomes greater than zero, as indicated by the output of comparator 1104, the signal assigned to the monitored finger has failed the percent-below-threshold criteria to remain assigned, and should be de-assigned. (Column 9, lines 33-59 of Bi)

As can be seen, this passage discusses measuring the total amount of time, during a first length Δt interval, a measured signal quality of the monitored finger is less than the threshold R. If a difference between the measured total amount of time and the allowed amount of time the signal quality of the monitored finger may spend below the threshold is greater than zero, then the signal assigned to the monitored finger is determined to have failed the percent-below-threshold criterion to remain assigned, and thus should be de-assigned.

This, however, is not the same or equivalent to "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold" as recited in amended claim 1. This is because there is only one threshold, threshold R, that Bi is concerned with. Namely, Bi is not concerned with and does not determine a time period over which the signal quality of the monitored finger satiates one threshold but is below another threshold. According to Bi, so long as the amount of time during a first length Δt interval that the signal of the monitored finger falls below the threshold R is not greater than an allowed amount of time, the monitored finger will not be de-assigned. In contrast, according to the claimed embodiment of claim 1 the finger assignment will be de-assigned even though the signal-strength of the finger assignment satiates the second signal-strength threshold if the signal-strength of the finger assignment is below the first signal-strength threshold for more than the time threshold.

Thus, Bi fails to disclose the limitations recited in amended claim 1 and missing from Daudelin. Accordingly, it is respectfully submitted that claim 1 is patentable over Daudelin in view of Bi.

Claims 2-9, 11, 13, 14 and 16-18 are believed to be patentable over the cited reference because of their respective dependency on patentable independent claim 1, and because of the additional limitations recited by those claims. Therefore, it is respectfully requested that the rejection of claims 1-9, 11, 13, 14 and 16-18 under 35 U.S.C. § 103(a) be withdrawn.

Rejection of Claim 15

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Daudelin in view of Bi as applied to claims 1-9, 11, 13, 14 and 16-18, and in further view of U.S. Patent No. 5,898,928 to Karlsson et al. (hereinafter "Karlsson").

The cited references do not teach or suggest the claimed subject matter of claim 15, which depends on claim 1. As explained above, Daudelin and Bi fail to disclose a combination of the recited limitations of amended claim 1. Karlsson is directed to adaptive frequency allocation in a telecommunication system. More specifically, Karlsson discloses filtering signal strength measurements using an adaptation (col. 7, lines 16-30). Karlsson fails to remedy such deficiencies as Karlsson also fails to disclose a combination of the recited limitations of amended claim 1. For example, among other things, there is no disclosure, teaching or suggestion in Karlsson of preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold less than the first signal-strength threshold, determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold, and allowing the finger assignment to be deassigned if said time period exceeds a time threshold.

Thus, Daudelin, Bi and Karlsson, whether individually or in combination, fail to disclose the recited limitations of amended claim 1. Amended claim 1 is thus believed to be patentable over Daudelin in view of Bi, and in further view of Karlsson.

Claim 15 is believed to be patentable over the cited reference because of its respective dependency on patentable independent claim 1, and because of the additional limitations recited by claim 15. Therefore, it is respectfully requested that the rejection of claim 15 under 35 U.S.C. § 103(a) be withdrawn.

Rejection of Claims 19-27, 29, 31, 32, 34-45, 47, 49, 50 and 52-54

Claims 19-27, 29, 31, 32, 34-45, 47, 49, 50 and 52-54 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Daudelin in view of Bi as applied to claims 1-14 and 16-18, and in further view of U.S. Patent No. 5,852,630 to Langberg et al. (hereinafter "Langberg").

In light of the amendment to independent claims 19 and 37, Applicants respectfully request the Examiner's reconsideration and further examination of the claims in view of the remarks below.

Amended claim 19 recites, inter alia, a wireless communication device comprising ... "a computer readable memory unit coupled to said processor, said computer readable memory unit containing program instructions stored therein that execute, via said processor, and cause the processor to perform ... preventing said finger assignment from being deassigned if said signal-strength of said finger assignment satiates a second threshold, said second signal-strength threshold being less than said first signal-strength threshold; and determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold, wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

It is respectfully submitted that the cited references do not meet the limitations of claim 19. For example, the recited references fail to at least teach or suggest "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

In the Office Action, it is admitted that "Daudelin does not disclose preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold, the second signal-strength threshold being less than the first signal-strength threshold; and determining a time period over which the signal-strength of the finger assignment satiates the second signal-strength threshold, wherein the finger assignment is allowed to be deassigned if the time period fails to satiate a time threshold" (Office Action, page 13).

Nevertheless, certain passages in Bi are cited for disclosing such limitations (Office Action, page 13). In particular, the Office Action states that Bi discloses "measuring a time period during a time interval which the signal strength (quality) spends below a threshold (see column 9, lines 33-59), which in effect also measures the amount of time the finger spends above the threshold (which is the amount of time in the interval the signal quality is above the threshold, and based on the time in which the signal spends above or below the signal quality threshold as compared to a time threshold during the time interval, the finger is de-assigned" (Office Action, page 13).

To be sure, the cited passage of Bi is provided below.

> Summer 1101 receives from rake receiver 507 over lead 510 a continuous measure of signal quality of the monitored finger, and continually produces on lead 1113 a value which is less than zero whenever the signal quality of the monitored finger is less than the threshold R. When a finger is newly assigned, block 1102 is initialized by controller 1105 and samples the first length .DELTA.t value on input lead 1114, and then, during the ensuing first length .DELTA.t interval, sums the amount of time which the value on lead 1113 spends less than zero. At the end of this first length .DELTA.t time interval, block 1102 outputs on lead 1115 the total amount of time it has calculated the signal quality from the monitored finger was below threshold R.

> The allowed amount of time which the monitored finger's signal quality may spend below the threshold during the preceding length of time .DELTA.t is calculated by multiplier 1112 as P*(.DELTA.t). Summer 1103 forms the difference between the measured amount of time the monitored finger spent below the threshold during the preceding first length .DELTA.t time interval, and the allowed amount of time the signal quality for the monitored finger may spend below the threshold during the preceding first length .DELTA.t time interval. In this embodiment, if this value at any time becomes greater than zero, as indicated by the output of comparator 1104, the signal assigned to the monitored finger has failed the percent-below-threshold criteria to remain assigned, and should be de-assigned. (Column 9, lines 33-59 of Bi)

As can be seen, this passage discusses measuring the total amount of time, during a first length Δt interval, a measured signal quality of the monitored finger is less than the threshold R. If a difference between the measured total amount of time and the allowed amount of time the signal quality of the monitored finger may spend below the threshold is greater than zero, then the signal assigned to the monitored finger is determined to have failed the percent-below-threshold criterion to remain assigned, and thus should be de-assigned.

This, however, is not the same or equivalent to "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold" as recited in amended claim 1. This is because there is only one threshold, threshold R, that Bi is concerned with. Namely, Bi is not concerned with and does not determine a time period over which the signal quality of the monitored finger satiates one threshold but is below another threshold. According to Bi, so long as the amount of time during a first length Δt interval that the signal of the monitored finger falls below the threshold R is not greater than an allowed amount of time, the monitored finger will not be de-assigned. In contrast, according to the claimed embodiment of claim 1 the finger assignment will be de-assigned even though the signal-strength of the finger assignment satiates the second signal-strength threshold if the signal-strength of the finger assignment is below the first signal-strength threshold for more than the time threshold.

Thus, Bi fails to disclose the limitations recited in amended claim 19 and missing from Daudelin. Accordingly, it is respectfully submitted that claim 19 is patentable over Daudelin in view of Bi.

Langberg is directed to a technique for an RADSL transceiver warm start activation procedure with precoding. More specifically, Langberg discloses that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium (col. 3, lines 51-65).

As explained above, Daudelin and Bi fail to disclose a combination of the recited limitations of amended claim 19. Langberg fails to remedy such deficiencies as Langberg also fails to disclose the limitations recited in amended claim 19 that are missing from Daudelin and Bi. For example, among other things, there is no disclosure, teaching or suggestion in Langberg of preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold less than the first signal-strength threshold, determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold, and allowing the finger assignment to be deassigned if said time period exceeds a time threshold.

Thus, Daudelin, Bi and Langberg, whether individually or in combination, fail to disclose the recited limitations of each of amended claim 19. Amended claim 19 is thus believed to be patentable over Daudelin in view of Bi, and in further view of Langberg.

Amended claim 37 recites, inter alia, a computer readable medium containing computer readable codes stored therein that are executable by a processor to cause a wireless communication device to implement a method of managing multipath signals, by ... "preventing said finger assignment from being deassigned if said signal-strength of said finger assignment satiates a second threshold, said second signal-strength threshold being less than said first signal-strength threshold; and determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold, wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

It is respectfully submitted that the cited references do not meet the limitations of claim 37. For example, the recited references fail to at least teach or suggest "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold."

In the Office Action, the Examiner states that "Regarding claims 37-45, 47, 49, 50, and 52-54, Daudelin and Bi et al. discloses all of the subject matter as described in the previous rejection (see rejection of claims 1-9, 11, 13, 14, and 16-18), except for the method written as a computer program product with a computer readable storage medium" (Office Action, pages 14-15). Applicants respectfully disagree.

Firstly, Daudelin does not disclose the limitations of claim 37 as it is admitted in the Office Action that "Daudelin does not disclose preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold, the second signal-strength threshold being less than the first signal-strength threshold; and determining a time period over which the signal-strength of the finger assignment satiates the second signal-strength threshold, wherein the finger assignment is allowed to be deassigned if the time period fails to satiate a time threshold" (Office Action, page 13).

Secondly, Bi fails to remedy the deficiencies of Daudelin. The passage of Bi, column 9, lines 33-59, cited in the Office Action in rejecting claim 1 discusses measuring the total amount of time, during a first length Δt interval, a measured signal quality of the monitored finger is less than the threshold R. In other words, according to Bi, if a difference between the measured total amount of time and the allowed amount of time the signal quality of the monitored finger may spend below the threshold is greater than zero, then the signal assigned to the monitored finger is determined to have failed the percent-below-threshold criterion to remain assigned, and thus should be de-assigned.

This, however, is not the same or equivalent to "determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold" and "wherein said finger assignment is allowed to be deassigned if said time period exceeds a time threshold" as recited in amended claim 1. This is because there is only one threshold, threshold R, that Bi is concerned with. Namely, Bi is not concerned with and does not determine a time period over which the signal quality of the monitored finger satiates one threshold but is below another threshold. According to Bi, so long as the amount of time during a first length Δt interval that the signal of the monitored finger falls below the threshold R is not greater than an allowed amount of time, the monitored finger will not be de-assigned. In contrast, according to the claimed embodiment of claim 1 the finger assignment will be de-assigned even though the signal-strength of the finger assignment satiates the second signal-strength threshold if the signal-strength of the finger assignment is below the first signal-strength threshold for more than the time threshold.

Thus, Bi fails to disclose the limitations recited in amended claim 37 and missing from Daudelin. Accordingly, it is respectfully submitted that claim 37 is patentable over Daudelin in view of Bi.

Langberg is directed to a technique for an RADSL transceiver warm start activation procedure with precoding. More specifically, Langberg discloses that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium (col. 3, lines 51-65).

As explained above, Daudelin and Bi fail to disclose a combination of the recited limitations of amended claim 37. Langberg fails to remedy such deficiencies as Langberg also fails to disclose the limitations recited in amended claim 37 that are missing from Daudelin and Bi. For example, among other things, there is no disclosure, teaching or suggestion in Langberg of preventing the finger assignment from being deassigned if the signal strength of the finger assignment satiates a second threshold less than the first signal-strength threshold, determining a time period over which said signal-strength of said finger assignment satiates said second signal-strength threshold but is below said first signal-strength threshold, and allowing the finger assignment to be deassigned if said time period exceeds a time threshold.

Thus, Daudelin, Bi and Langberg, whether individually or in combination, fail to disclose the recited limitations of each of amended claim 37. Amended claim 37 is thus believed to be patentable over Daudelin in view of Bi, and in further view of Langberg.

Claims 20-27, 29, 31, 32, 34-36, 38-45, 47, 49, 50 and 52-54 are believed to be patentable over the cited reference because of its respective dependency on patentable independent claims 19 and 37, respectively, and because of the additional limitations recited by those claims. Therefore, it is respectfully requested that the rejection of claims 19-27, 29, 31, 32, 34-45, 47, 49, 50 and 52-54 under 35 U.S.C. § 103(a) be withdrawn.

Conclusion

Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in independent claims 1, 19 and 37, and thus such claims are allowable. Because the remaining claims depend from allowable independent claims 1, 19 and 37, respectively, and also because they include additional limitations, such claims are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsiders this application and timely allow all pending claims. Examiner Shah is

encouraged to contact Mr. Han by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informality in the claims, he is encouraged to contact Mr. Han by telephone to expediently correct such informalities.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

    /Andy M. Han/
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AMH:ks
Enclosure:
    1 Sheet of Replacement Drawings (Figure 9B)

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